ASOS Product Improvement

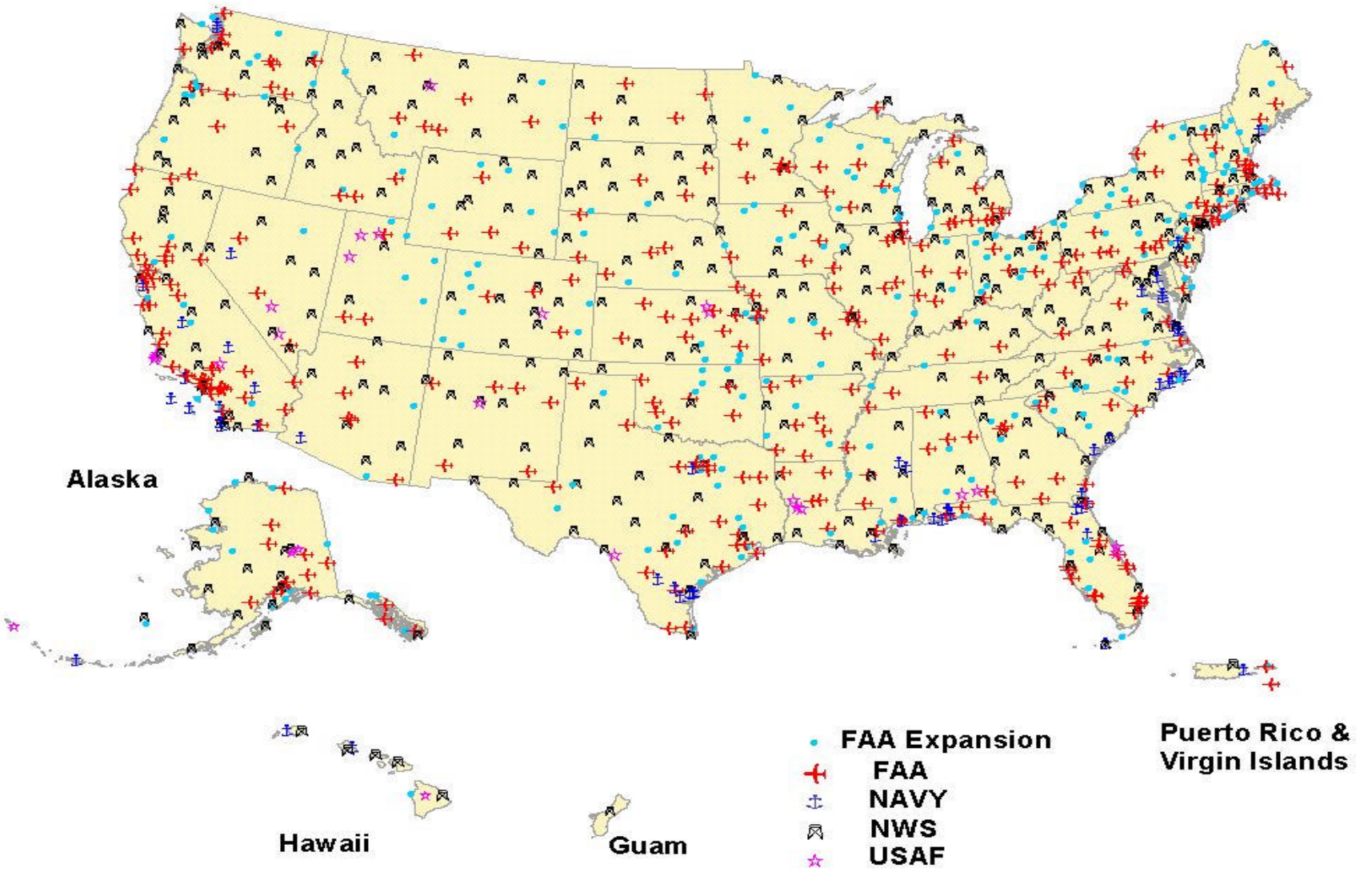
Program Briefing to the DOC Budget Office

ASOS Product Improvement

The Automated Surface Observing System (ASOS) is the nation's primary surface weather observing network

- **Joint DOC/DOD/DOT project**
- **993 Systems – 314 NWS, 569 FAA, 76 Navy, 34 USAF**
- **Observes Wind, Temperature/Dew Point, Pressure, Cloud Height/Coverage, Rain/Snow/Freezing Rain Discrimination, Visibility, Rain Accumulation, Fog, Haze, Thunderstorm**
- **Observes, Archives, and Transmits Observations Automatically in Text and Digitized Voice (Radio Broadcast and Dial-in Telephone)**
- **1991-98 Production/Installation Contract with AAI/SMI**

ASOS Locations



ASOS Product Improvement

What?

- *The ASOS Product Improvement Program contains seven prioritized sensor/processor improvements*
  - All Weather Precipitation Accumulation Gauge
  - Dewpoint Sensor Replacement
  - ACU Processor Upgrade
  - Ice-Free Wind Sensor
  - Enhanced Precipitation Identifier
  - Ceilometer Replacement
  - Sunshine Duration Sensor

Why?

- Improve Maintainability
- Improve measurement qualilty and utility
- Fully meet NWS & Aviation Forecast Requirements

Who?

- NWS, FAA, Navy, Air Force

ASOS PI Priorities & Benefits

PRIORITY	PROJECT	OBJECTIVE
1	All Weather Precipitation Accumulation Gauge (AWPAG)	Improve Performance in Solid and Solid/Liquid Mixed Precipitation
2	Dewpoint Sensor	Increase Reliability, Reduce Maintenance
3	Acquisition Control Unit Processor Upgrade	Increase Processing Speed and Memory
4	Ice-Free Wind Sensor	Increase Reliability, Reduce Maintenance, particularly in winter weather; incorporate WMO Gust Standard
5	Enhanced Precipitation Identifier	Add Capability to Automatically Report Drizzle, Hail, and Ice Pellets
6	Ceilometer (Cloud Height Sensor)	Compensate for Losing Logistical Support of Current Ceilometer in 2008, Increase Altitude Range beyond 12,000 feet
7	Sunshine Duration Sensor	Replace Obsolete and Unsupportable 1950's Technology

ASOS Product Improvement

ASOS PI Project Phases

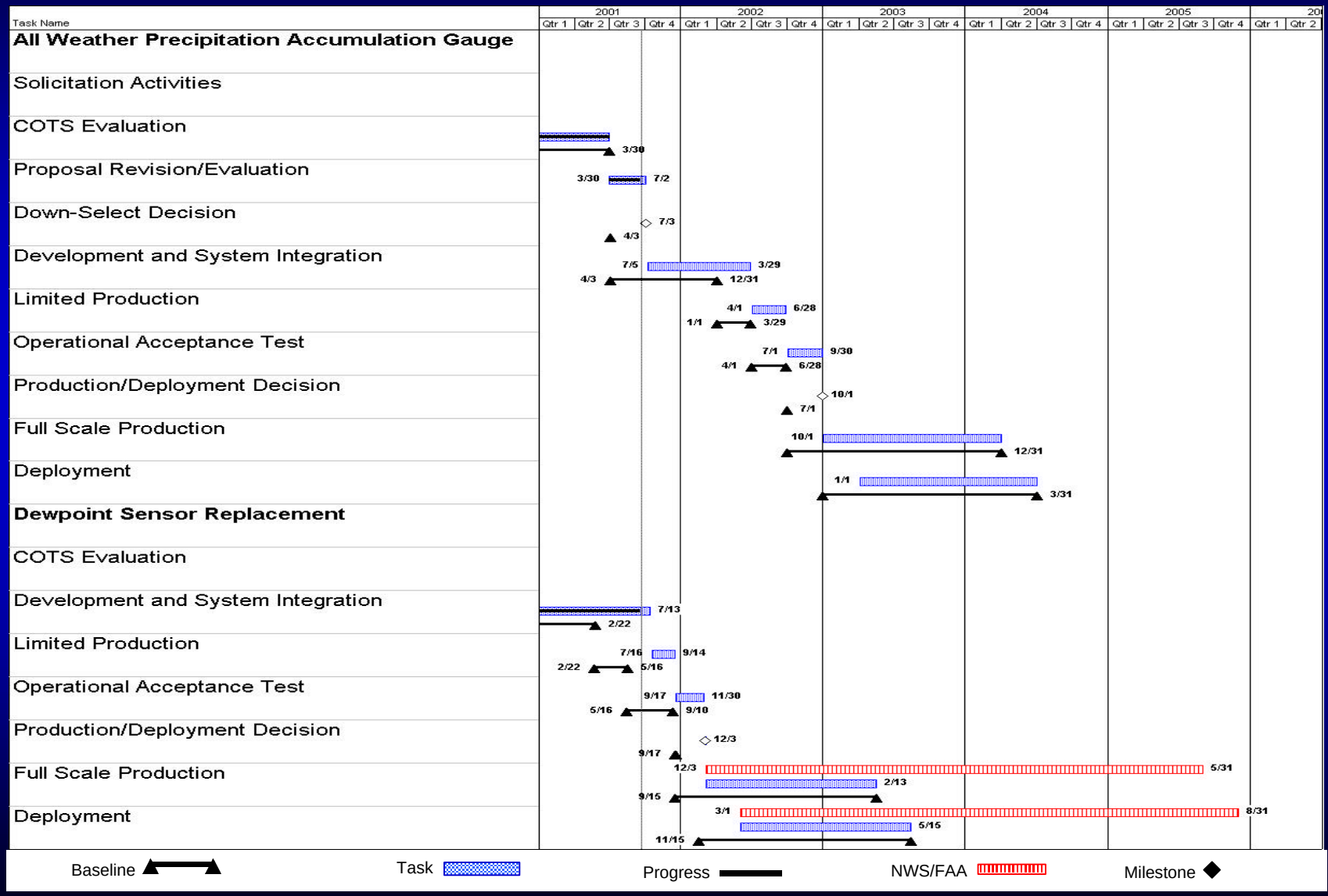
- Concept Exploration/Solicitation Preparation
- Commercial-off-the-Shelf (COTS) Evaluation
- Development and System Integration/Sensor Qualification
- Limited Production/Operational Acceptance Test (OAT)
- Full-Scale Production/Deployment

ASOS Product Improvement Phasing

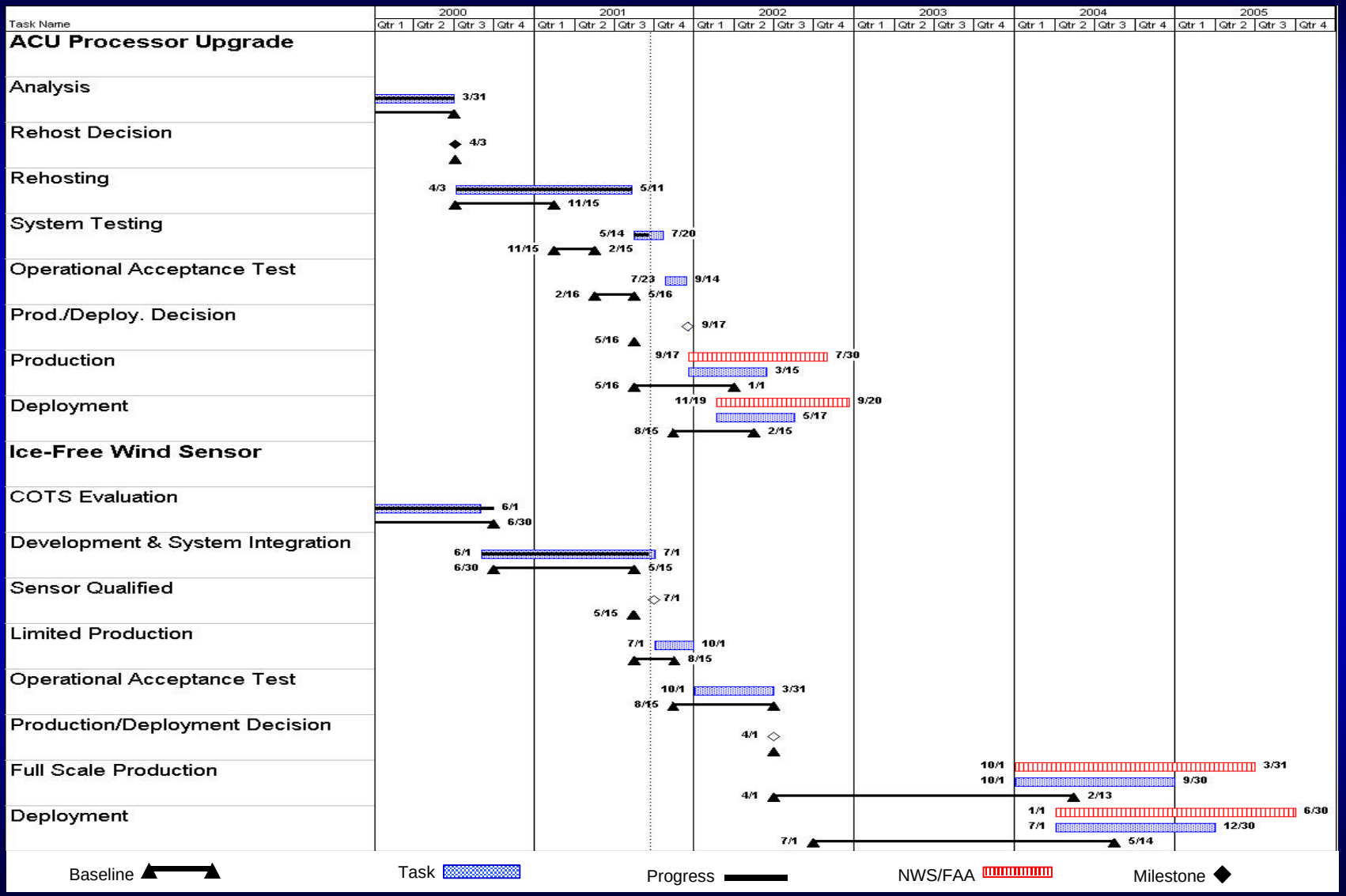
Project	Concept Exploration	COTS Evaluation	Development & Qualification	Limited Prod. & OAT	NWS Production & Deployment
AWPAG	Prior Years	FY00/01	FY01/02	FY02	FY03/04
Dewpoint	Prior Years	FY99/00	FY00/01	FY01/02	FY02/03
Processor	Prior Years	N/A	FY00/01	FY01	FY01/02
IF Wind	Prior Years	FY99/00	FY00/01	FY01/02	FY04/05
Enhanced Precip. ID	To FY02	FY02/FY03	FY03/04	FY04	FY04/06
Ceilometer	To FY04	FY04	FY05	FY06	FY06/08
Sunshine	To FY06	FY06	FY07	FY07	FY08

FY01 FY02

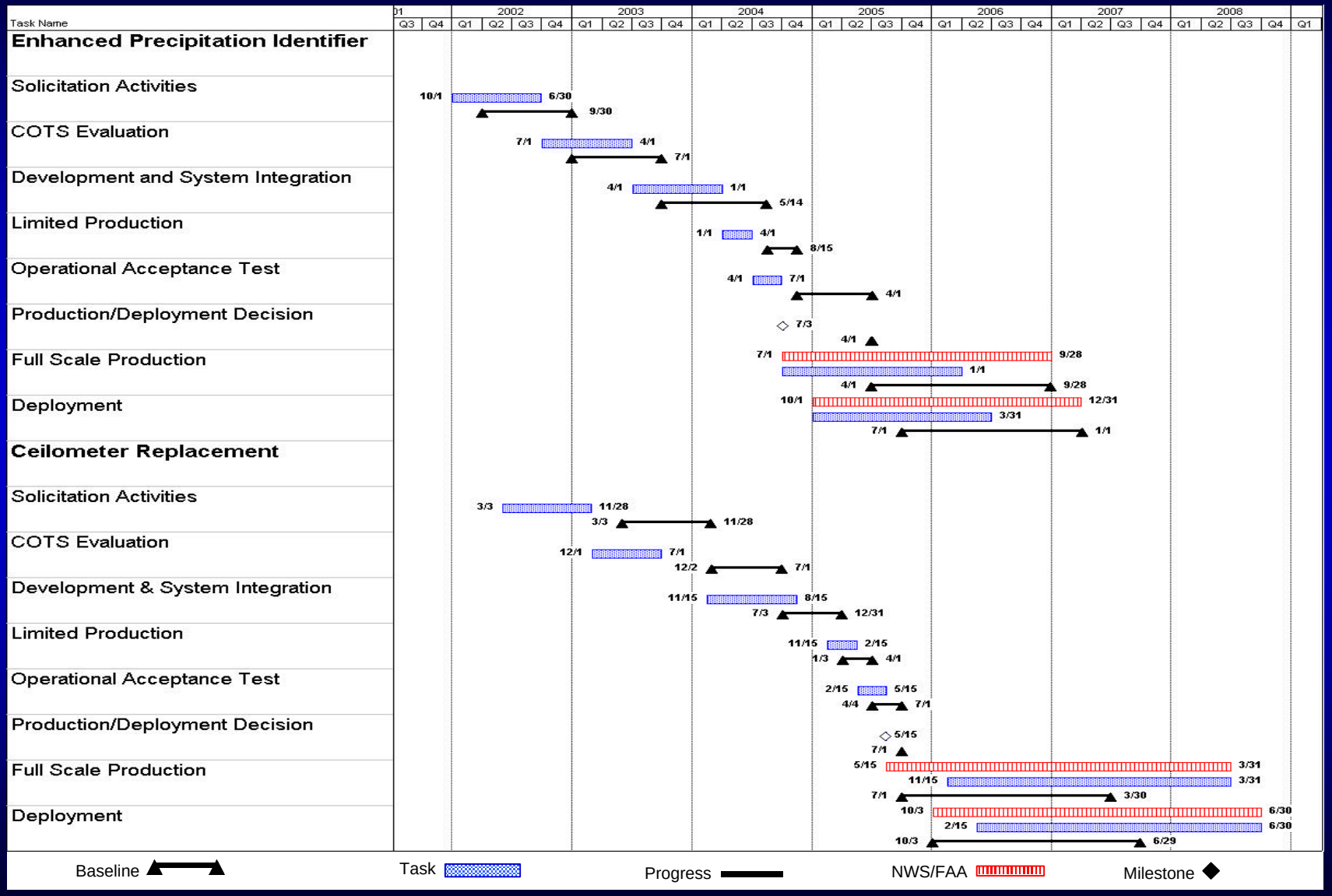
ASOS Schedule



ASOS Schedule



ASOS Schedule



Budget ($K)

	FY00 & Prior	FY01	FY02	Cost to Complete	Total
Program Management	7,605	1,699	1,388	5,976	16,668
All Weather Precipitation Accumulation Gauge	859	300	1,386	2,315	4,860
Dewpoint Sensor	1,114	1,082	1,245		3,441
Processor Upgrade	660	706	976		2,342
Ice Free Wind Sensor	848	60		1,896	2,804
Enhanced Precipitation Identifier	335		130	6,187	6,652
Ceilometer Replacement	73			12,208	12,281
Sunshine Sensor	695			2,168	2,863
Total	12,189	3,847	5,125	30,750	51,911

FY02 NWS Deployment – All 314 Processors & 145 Dewpoint Sensors

ASOS Product Improvement

Issues

- **Stability of FAA Partner Funding**
  - **Reductions in FAA funding are imposing schedule delays in full implementation**
  - **Uncertainty in DOD Partner Participation**
  - **AWPAG-COTS sensors don't meet NWS specification; development necessary**